DATASHEET - HLR50/1H(DC)230V

Solid-state relay, Hockey Puck, 1-phase, 50 A, 24 - 265 V, DC

Powering Business Worldwide™

Part no.	**HLR50/1H(DC)230V**
	360052
EL Number (Norway)	**4309356**

General specifications

Product name	Eaton Moeller series HLR solid state relay
Part no.	HLR50/1H(DC)230V
EAN	4015081998197
Product Length/Depth	28.8 millimetre
Product height	58.2 millimetre
Product width	44.8 millimetre
Product weight	0.06 kilogram
Compliances	RoHS Compliant CE Marked
Certifications	EAC UL 508 CE CCC UL-File No.: E338590 CSA-File No.: 603498
Product Tradename	HLR
Product Type	Solid-state relay
Product Sub Type	None

General information

Degree of protection	IP20
Frequency rating	45 Hz - 65 Hz
Mounting position	Mount device in specified orientation and do not obstruct the heatsink
Number of phases	1
Number of pilot lights	1
Overvoltage category	III
Pollution degree	2
Rated impulse withstand voltage (Uimp)	6 kV (1.2/50 µs)
Series	HLR
Shock resistance	15/11 g/ms (according to EN 50155, EN 61373)
Type	Solid-state relay
Vibration resistance	2 g/axis (2-100 Hz, IEC 60068-2-6, EN 50155, EN 61373)
Voltage type	DC

Features & Functions

Functions	Switching at zero-crossing
Electrical connection type for auxiliary- and control-current circuit	Screw connection
Electrical connection type of main circuit	Screw connection

Climatic environmental conditions

Altitude	9
Ambient storage temperature - min	-40 °C
Ambient storage temperature - max	100 °C
Climatic proofing	95% relative humidity non-condensing at 40°C
Operating temperature - min	-40 °C
Operating temperature - max	80 °C

Electro magnetic compatibility

Air discharge	8 kV (according to IEC/EN 61000-4-2)
Burst Impulse	Main: 2 kV, 5 kHz PC 1 (according to IEC/EN 61000-4-4) Control: 1 kV, 5 kHz PC 1 (according to IEC/EN 61000-4-4)
Contact discharge	4 kV (according to IEC/EN 61000-4-2)
Electromagnetic fields	10 V/m, 80 - 1000 MHz and 1.4 - 2.0 GHz, PC 1

	3 V/m, 2.0 - 2.7 GHz, PC 1
Immunity to line-conducted interference	10 V/m, 0.15 - 80 MHz, PC 1 (according to IEC/EN 61000-4-6)
Radio interference class	Class A
Terminal capacities	
Terminal capacity (flexible with ferrule)	Main: 1 x 1-4 mm^2, 2 x 1-4 mm^2 Control: 1 x 0.5-2.5 mm^2, 2 x 0.5-2.5 mm^2
Terminal capacity (solid)	Main: 1 x 2.5-6 mm^2, 2 x 2.5-6 mm^2 Control: 1 x 0.5-2.5 mm^2, 2 x 0.5-2.5 mm^2
Terminal capacity (solid/stranded AWG)	Main: 1 x 14-10, 2 x 14-10 Control: 1 x 18-12, 2 x 18-12
Terminal capacity (stranded)	Main: 1 x 2.5-6 mm^2, 2 x 2.5-6 mm^2 Control: 1 x 0.5-2.5 mm^2, 2 x 0.5-2.5 mm^2
Tightening torque	Main: 2.4 Nm (21.2 lb-in) Control: 0.5 Nm (4.4 lb-in)
Screwdriver size	Main: Pozidriv 2 Control: Pozidriv 1
Electrical rating	
Operating voltage - max.	265 V
Operating voltage - min.	24 V
Rated operational current (Ie) at AC-1	0 A
Rated operational current (Ie) at AC-3	0 A
Rated operational current (Ie) at AC-51	50 A
Rated operational current (Ie) at AC-53A	15 A
Rated operational current (Ie) at AC-53B	0 A
Rated operational voltage (Ue) at AC - min	24 V
Rated operational voltage (Ue) at AC - max	265 V
Control circuit	
Delay time	1/2 period
Drop-out time	< 1/2 period
Drop-out voltage	1.2 V DC
Input current	< 12 mA
Pick-up voltage	2.5 V DC
Rated control supply voltage (Us) at AC, 50 Hz - min	0 V
Rated control supply voltage (Us) at AC, 50 Hz - max	0 V
Rated control supply voltage (Us) at AC, 60 Hz - min	0 V
Rated control supply voltage (Us) at AC, 60 Hz - max	0 V
Rated control supply voltage (Us) at DC - min	3 V
Rated control supply voltage (Us) at DC - max	32 V
Design verification	
Equipment heat dissipation, current-dependent Pvid	56 W
Heat dissipation per pole, current-dependent Pvid	56 W
Rated operational current for specified heat dissipation (In)	50 A
Static heat dissipation, non-current-dependent Pvs	0 W
10.2.2 Corrosion resistance	Meets the product standard's requirements.
10.2.3.1 Verification of thermal stability of enclosures	Meets the product standard's requirements.
10.2.3.2 Verification of resistance of insulating materials to normal heat	Meets the product standard's requirements.
10.2.3.3 Resist. of insul. mat. to abnormal heat/fire by internal elect. effects	Meets the product standard's requirements.
10.2.4 Resistance to ultra-violet (UV) radiation	Please enquire
10.2.5 Lifting	Does not apply, since the entire switchgear needs to be evaluated.
10.2.6 Mechanical impact	Does not apply, since the entire switchgear needs to be evaluated.
10.2.7 Inscriptions	Meets the product standard's requirements.
10.3 Degree of protection of assemblies	Does not apply, since the entire switchgear needs to be evaluated.
10.4 Clearances and creepage distances	Meets the product standard's requirements.
10.5 Protection against electric shock	Does not apply, since the entire switchgear needs to be evaluated.
10.6 Incorporation of switching devices and components	Does not apply, since the entire switchgear needs to be evaluated.
10.7 Internal electrical circuits and connections	Is the panel builder's responsibility.
10.8 Connections for external conductors	Is the panel builder's responsibility.

10.9.2 Power-frequency electric strength			Is the panel builder's responsibility.
10.9.3 Impulse withstand voltage			Is the panel builder's responsibility.
10.9.4 Testing of enclosures made of insulating material			Is the panel builder's responsibility.
10.10 Temperature rise			The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.
10.11 Short-circuit rating			Is the panel builder's responsibility. The specifications for the switchgear must be observed.
10.12 Electromagnetic compatibility			Is the panel builder's responsibility. The specifications for the switchgear must be observed.
10.13 Mechanical function			The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

Technical data ETIM 9.0

Relays (EG000019) / Solid state relay (EC002055)

Electric engineering, automation, process control engineering / Low-voltage switch technology / Contactor (LV) / Solid state relay (ecl@ss13-27-37-10-14 [ACN970016])

Type of electric connection			Screw connection
Complete with socket			No
With detachable clamps			No
Modular version			No
With LED indication			Yes
Rated control supply voltage AC 50 Hz		V	0 - 0
Rated control supply voltage AC 60 Hz		V	0 - 0
Rated control supply voltage DC		V	3 - 32
Voltage type for actuating			DC
Number of phases			1
Model			Other
Type of switch function			
Switching at zero-crossing			Yes
Voltage type (operating voltage)			AC
Operating voltage AC 50 Hz		V	42 - 230
Operating voltage AC 60 Hz		V	42 - 230
Operating voltage DC		V	0 - 0
Rated operation current Ie at AC-1		A	0
Rated operation current Ie at AC-3		A	0
Rated operation current Ie at AC-51		A	50
Rated operation current Ie at AC-53a		A	15
Rated operation current Ie at AC-53b		A	0
Degree of protection (IP)			IP20
Relay technology category according to IEC 61810-7			
Width		mm	44.8
Height		mm	58.2
Depth		mm	28.8